April 1998

North Fork Fall Creek HUA Water Quality Project Progress Report Tennessee

Background

North Fork/Fall Creek watershed containing 77,000 acres, in karst terrain is located in Bedford County, Tennessee. Agriculture is diversified: dairy, poultry, corn, soybeans and wheat are the major enterprises. Residential development is significant in some areas; many households use private wells and conventional septic systems. The watershed project focuses on animal and human wastes, sediment and nutrients. Over three million dollars has been invested in the project, since its origin in 1990.

Project Contacts

Jenny E. Adkins, NRCS	615-736-7241
Patrick Gibson, FSA	615-736-5551
George F. Smith, UTAES	423-974-7306

Impacts/Accomplishments

Youth education was one of the primary focuses. Age-appropriate education features a water-drop character, Wally Water. He was presented using video, coloring books, story hour visits, demonstration 4-H programs, science fairs, stream surveys and science class workshops.

A low pressure pipe septic system demonstration was installed within the watershed. Monitoring showed the system proved to be an acceptable alternative system allowing for acceptable water to be released into the hydrologic cycle.

Partners

- University of Tennessee Agricultural Extension Service
- USDA, Natural Resources Conservation Service
- USDA, Farm Service Agency
- USDI, Geological Survey
- Tennessee Department of Agriculture
- Tennessee Division of Forestry
- Tennessee Department of Environment and Conservation
- Bedford County Soil Conservation District
- Tennessee Farm Bureau Federation

Manure testing, soil testing and farm visits on nutrient management have been a focus. Demonstration plots exhibiting organic nutrient applications on corn were established. About 400 producers were contacted and 600 samples were taken for nutrient planning.

Target Audience

Animal agriculture was initially identified as the source of bacteria in surface water. However, land use inventories in affected tributaries and USGS analysis for detergents showed septic systems were a major source in many cases. Education for all residents became a priority.

Improvements to the Community

Reducing sediment, nutrients, bacteria, and pesticides from entering surface water and groundwater was one of the primary objectives in this project. The project provided for technical and financial assistance in implementing best management practices, which were proven to reduce these types of nonpoint source pollutants. Conservation tillage, integrated pest management, nutrient management plans, animal waste systems, and poultry composters were a few of the BMP's implemented and supported through the project's efforts. The reduction of these pollutants from North Fork-Fall Creek enhanced the aquatic and terrestrial habitat, wildlife, and recreational opportunities in the HUA.

Education Programs:

More than 10,000 youth have participated in the targeted educational programs. Surveys show 84%-94% retained key concepts two to four years later. Also, 75% of the 4-H audience report changes in family lifestyle. Parts of the program are used in other counties and utility districts.

Publications

"*The Low-Pressure Pipe Septic System: An Alternative Septic-System for Shallow or Sandy Soils.*" UTAES SP392-E.

Bennett, M.W., 1997, *Reconnaissance of Ground-Water Quality at Selected Sites in Bedford County, Tennessee,* August 1996. Open File Report 97-412.

Byl, T. and H.C. Mattraw. *Characterizing Water Quality in the North Fork-Fall Creek Hydrologic Unit Area, Tennessee.* USGS Open File Report 95-372.

Byl. T., H. Hankin, J. R. Mimms, G. Hoffstetter, and B. Hazlett. 1996. *Application of a Geographic Information System to Identify and Prioritize Sources of Nonpoint Source Pollution in a Karst Watershed in Tennessee.*

Learning About Water With Wally. UTAES Videotape. 1995

Wally Water Coloring Book, UTAES. 1994

Alternative Septic Systems. UTAES Videotape. 1994

A video demonstrating the installation and operation of a low pressure pipe system along with a fact sheet was developed and distributed to real estate contractors and homeowners. This information has also proved to be valuable for local health officials in permitting septic systems. Approximately 600 people, through the Family Community Education program, were provided information on water quality and household waste issues. As a result, use of the recycling centers established through project interest increased markedly. Over 8,000 pounds of household hazardous wastes were collected at the last "amnesty" day.

A field day was held with 300 participants consisting of farmers, agency personnel and public officials. Information and demonstrations were provided concerning economics and environmental benefits of changes made through the project with landowner and interagency cooperation.